

## FOLDABLE ASHTRAY

### CROSS REFERENCE TO RELATED PATENT APPLICATIONS

**[0001]** This patent application claims priority from provisional patent application serial no. 60/408,244 filed September 5, 2002.

### BACKGROUND OF THE INVENTION

#### Field of the Invention

**[0002]** The invention relates to a collapsible, disposable ashtray suitable for use at a beach.

#### Discussion of Related Art

**[0003]** A conventional ashtray with an open top has been commercialized, who recognized a need to reduce cigarette butt pollution along the shores and beaches by providing an easy and fun to use collapsible ashtray. The ashtray is kept in place in beach sand by nailing it down through a aperture in the base of the ashtray and throwing sand into the open ashtray. The weight of the sand helps keep the ashtray from toppling over. When done, the ashtray is picked up and the sand inside is released through the aperture. The diameter of the aperture is smaller than the width of the conventional cigarette butt.

**[0004]** The conventional ashtray is made from cardboard material that is scored or embossed to define a plurality of fold lines, with panels defined between the fold lines. When opened, the ashtray takes the shape of an inverted cone or pyramid, with a partly closed bottom and an open top. By arranging two of the score lines diametrically opposite each other, the ashtray may be flattened by folding at the diametrically

opposite score lines. Some of the panels may be longer than others so as to be well suited to receive printed indicia on them.

**[0005]** The present inventor recognized, however, that when the conventional ashtray is filled with cigarette butts, the butts may fall out of the open top if the ashtray is toppled or not held sufficiently steady when carrying it away. It would therefore be desirable to modify the conventional ashtray so as to prevent cigarette butts from falling out inadvertently.

#### SUMMARY OF THE INVENTION

**[0006]** One aspect of the invention resides in an ashtray that is collapsible into a flattened position and expandable into an expanded position to hold cigarette butts within its confines and has at least one cover to keep the cigarette butts inside if the ashtray is flipped over. The ashtray may have a plurality of panels separated from each other by respective fold lines to form an inverted geometric shape in the expanded position, such an inverted pyramid or inverted cone. An aperture may be provided in a panel of the ashtray arranged closer to the apex of the inverted geometric shape than to an open base periphery. The at least one cover may be retained in position closing the open base periphery by engagement between the cover and either one of the panels or, if present, a further cover. When the open base area is closed by the at least one cover, cigarette butts remain inside the volume defined by the panels even when the ashtray is flipped over.

## BRIEF DESCRIPTION OF THE DRAWING

**{0007}** For a better understanding of the present invention, reference is made to the following description and accompanying drawings, while the scope of the invention is set forth in the appended claims:

FIG. 1 is a perspective view of a conventional ashtray ready for use.

FIG. 2 is a blank of cardboard material used in the manufacture of the conventional ashtray of FIG. 1.

FIG. 3 is a front view of the conventional ashtray of FIG. 1 in a flattened condition.

FIG. 4 is a top plan view of the conventional ashtray of FIG. 1 when in use as a container.

FIG. 5 is a perspective view as in FIG. 1, in accordance with an embodiment of the invention showing a cover in an open position.

FIG. 6 is a perspective view of the embodiment of FIG. 5, except with the cover in a closed position.

FIG. 7 is a perspective view of an additional embodiment in accordance with the invention but with a cover in a closed position.

## DETAILED DESCRIPTION OF THE INVENTION

**[0008]** Turning to FIG. 1, an ashtray **1** is made from cardboard or other suitable material and may be treated to exhibit some stiffness, water resistance and fire or flame resistance. However, the burning of embers of a cigarette will be placed in sand within the ashtray and thus not in direct contact with the ashtray during normal usage so that a high degree of flame resistance or fire resistance is not necessary.

[0009] As seen in FIG. 2, the ashtray 1 is formed of a blank 20 of paper or card board material that is cut to define a quadrant sector of a planar circle. The blank 20 has a body that is embossed or scored to define fold lines 8-11 that extend substantially in radial directions within the quadrant. The fold lines define panels 4-7 between successive fold lines 8-11. A flap 12 is provided that may be glued or otherwise secured to an opposite edge of the blank 20 when the fold lines 8-11 are folded to define a closed geometric shape, such as that of an inverted pyramid or cone.

[0010] The panels 6, 7 are radially shorter in length than the panels 4, 5, which facilitates imprinting of product identifying indicia, slogans or promotional materials on the portion of the panels 4, 5 that extend beyond that of the panels 6, 7. An aperture 2 is formed in one of the panels, such as panel 6 as shown, and situated closer to the radial center of the quadrant than to the panel's outer periphery. The size of the aperture 2 is smaller than that of a diameter of a cigarette butt.

[0011] By keeping fold lines 8, 10 flat as shown in Fig. 2 and folding fold line 9, the flap 12 may be folded along fold line 11 into face-to-face engagement with the panel 5 to which it may be glued or otherwise secured. After the securing is complete, e.g., a sufficient drying time has passed for the glue to harden and adhere, the ashtray resembles the flattened condition of Fig. 3. The fold lines 8, 10 may be folded to form a three dimensional geometric shape, such as an inverted pyramid or inverted conical shape (see Fig. 1). Fig. 4 illustrates that the open base has a dimension that is larger than the dimension of the apex 3 of the geometric shape. Thus, the ashtray may be flattened into a flattened condition of Fig. 3 or expanded into an expanded condition of Fig. 4.

**[0012]** When in the fully expanded condition, the apex **3** of the ashtray is urged into the sand, such as by pushing sand laterally against the outer surface areas of the side panels **4-5**. In use, ashes are deposited in the ashtray through the open base. The ashes fall into the sand within the ashtray. When the cigarette is finished, the remaining lit end or butt is crushed into the sand within the ashtray. The sand extinguishes the lit end by depriving it of oxygen. The ashtray is sufficiently large to permit several cigarettes to be extinguished in this manner. The apex **3** may be formed as a hole to permit sand to fall out when the ashtray is raised out of the sand.

**[0013]** The ashtray constructed in accordance with FIGS. 1-4 has an open top. The open top is located at the base of the inverted pyramid or conical shape. When the ashtray is filled with cigarette-ends or butts, however, the butts may fall out of the open top if the ashtray is toppled or not held sufficiently steady when carrying it away. To avoid the risk that butts may fall out, FIGS. 5-8 depict embodiments that include a foldable cover **20** to close the open top of the ashtray, but the ashtray is otherwise the same as that of FIGS. 1-4. The cover **20** is attached to one or an opposite two of the panels **4-7** and may require modification of those panels as shown.

**[0014]** The cover **20** may be comprised of two cover extensions **22, 24**, one having a slot **26** and the other having converging edges that either form an apex **28** or are truncated to fit in the slot **26** when both cover extensions **22, 24** are folded as shown in FIGS. 5-6. FIG. 5 is a perspective top view of the ashtray prior to folding of the two cover extensions **22, 24** of the cover **20** and FIG. 6 is a perspective top view after the two portions are folded. The two cover extensions **22, 24** may be printed with advertising indicia facing outwardly. When in the folded position, the two cover

extensions **22, 24** together completely close the open top or at least sufficient to prevent butts from escaping. The two cover extensions **22, 24** may have complementary configurations or male and female members that engage each other to retain the two cover extensions **22, 24** in the closed condition, which closes an open periphery of the base of the inverted pyramid or cone shape. To open, cover extension **22** is pulled out of the slot of cover extension **24** and then rotated about the fold line **38** which joins with panel **6**. The extension **24** is rotated about the fold line **36**, which joins with panel **5**.

**[0015]** As an alternative, as seen in FIG. 7, the cover **20** may be constructed of only of one piece and added to one of the shorter panels **6,7**. The cover **20** of FIG. 7 is of a dimension that completely or substantially closes the open top when in the folded position to an extent sufficient for preventing the butts from escaping. The cover **20** may have a projecting stub **30** that inserts into a slot **32** formed in a taller one of the panels **4, 5** or vice versa and thus extends from the top of an opposite one of the shorter panels **6, 7**. The cover **20** and the opposite one of the shorter panels **6, 7** may have complementary configurations that engage each other to retain the cover **20** in the closed condition, which closes an open periphery of the base of the inverted pyramid or cone shape. To open, the stub **30** is manually pulled out of the slot **32** by grasping and pulling side edges of cover **20** away from the slot **32** and then rotating the cover **20** about fold line **34**, which joins with panel **6**.

**[0016]** If the cover **20** is comprised of cover extensions **22, 24**, the cover extensions **22, 24** may extend from the appropriate opposing panels **5, 6** or **4, 7** of FIGS 1-3. In such a case, the portion **24** may have a side extension (not shown) that may be contoured and folded to close any side gap formed as a result of the difference in

dimension between the longer and shorter panels. This is because the fold for one of the portions **22**, **24** would be at the top of the longer panel and the fold for the other would be at the top of its opposite shorter panel.

**[0017]** With respect to the embodiments of FIGS. 5-7, all the panels instead may be of the same length. The radially outer portions of the longer panels of FIGS. 1-4 may not be needed to be folded over the top edges of the shorter panels to close the open top of the ashtray. Thus, such radially outer portions of the longer panels may be dispensed with, thereby rendering all the panels the same length. The cover **20** serves to do this.

**[0018]** Furthermore, the embodiments of Figs. 5-8 are one piece constructions and formed from a blank in the manner of Fig. 2, except that the cover **20** and associated complementary configurations or the male and female members, which are provided to engage each other, are added as well.

**[0019]** Thus, in use, the cover **20** is kept closed, except when ashes are to be deposited in the ashtray or cigarette butts are to be extinguished. By closing the cover **20** and retaining it in the closed position, an inadvertent toppling of the ashtray will not cause the cigarette butts to fall out. When the filled ashtray **1** is picked up, the sand within falls out the aperture **2** and the hole at apex **3**. The ashtray **1** may then be emptied or thrown away into a trash receptacle. If emptied, the ashtray **1** may be used again or collapsed into the flattened condition of Fig. 3.

**[0020]** While the foregoing description and drawings represent the preferred embodiments of the present invention, it will be understood that various changes and

modifications may be made without departing from the spirit and scope of the present invention.